

# RIVER REPORT

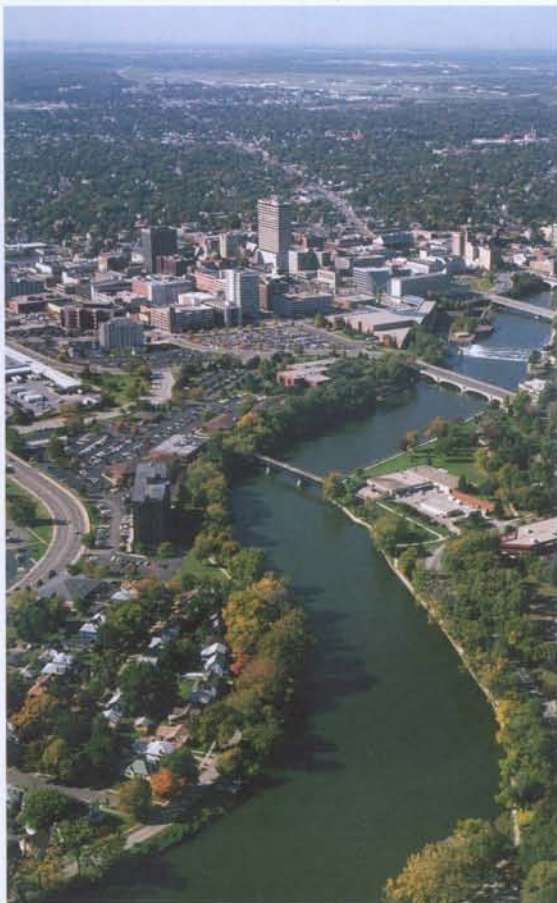
October 2005

Clean  
river  
Healthy  
neighborhoods

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## Mayor Announces 10-year Plan for a Cleaner River and Healthier Neighborhoods



longer acceptable to have raw sewage overflowing into people's basements and the river with nearly every rainfall."

Untreated sewage overflows into the river from the city's outdated sewer system, which can be overwhelmed by incoming stormwater when it rains or snows. These overflows send 1.8 billion gallons of untreated sewage into the St. Joseph River each year. In some neighborhoods, raw sewage backing up into people's basements is a chronic and recurring problem.

Mayor Luecke's Clean River-Healthy Neighborhoods Plan will help solve chronic sewage backups into basements in these neighborhoods and improve sewage collection and treatment capabilities. When complete, the 10-year plan will reduce the city's raw sewage overflow volume by 38 percent in a typical year.

"The St. Joseph River is an important community resource enjoyed by our residents as well as visitors to our area – from Olympic-caliber kayakers and recreational canoeists to weekend sport fishermen. It's a resource we need to protect," the mayor said.

The first four years of the plan will be financed by a sewer rate increase that was introduced to the City Council on Monday, October 10. The table below shows the annual revenue needed in 2006-2009 for new construction and operation and maintenance of the sewer system and treatment plant. Projected rates are based upon a monthly residential bill of 5,000 gallons.

Even with these proposed rate increases, the city's rates remain competitive with other communities' rates.

"We have not been standing still on this issue," the mayor said. "We have already spent more than \$87 million on improvements that have reduced overflows by more than 300 million

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### PHASED SEWER RATE INCREASE WILL FUND FIRST FOUR YEARS

Mayor Stephen J. Luecke on Oct. 7 announced a 10-year, \$118 million plan that will solve chronic sewage backups in several neighborhoods and continue to reduce raw sewage overflows into the St. Joseph River during wet weather.

"A 21<sup>st</sup> Century city needs to take responsibility for the sewage we create," Mayor Luecke said. "It's no

Year	Annual Revenue Needed	Monthly Residential Bill (5,000 Gallons)
Current (2005)	\$14,760,292	\$16.77
2006	\$18,912,979	\$21.62
2007	\$21,552,478	\$24.88
2008	\$23,743,729	\$27.63
2009	\$25,814,795	\$30.08

SOUTH BEND



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## WHY OUR SEWERS OVERFLOW WHEN IT RAINS

More than 100 years ago, South Bend, Mishawaka, Elkhart and many other cities built storm sewers to carry rainwater and melting snow away from homes, businesses and streets. In those horse-and-buggy days, these cities didn't have sewage treatment or even indoor plumbing.

When indoor plumbing came later, homeowners and business owners hooked their sewage lines to the existing storm sewers, combining storm water and raw sewage into one pipe. The pipes emptied directly into the river, until the 1950s when sewage treatment plants were built.

This was common practice in many U.S. cities, especially in the Northeast and Midwest.

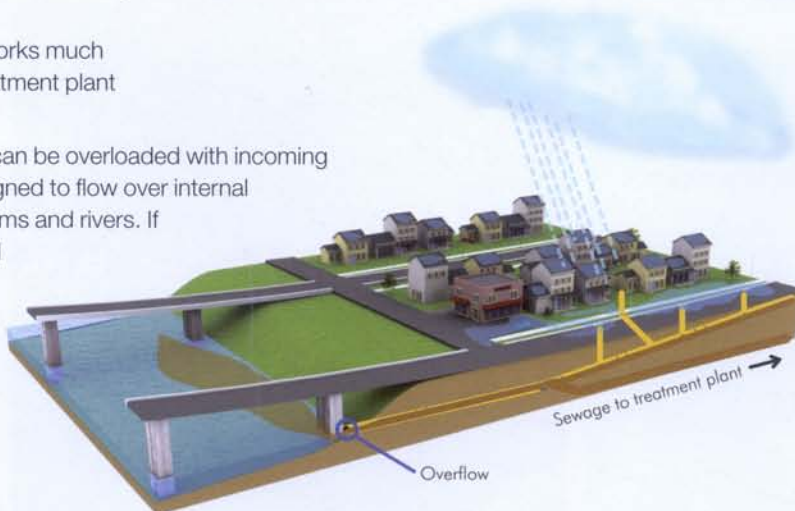
During dry weather, a "combined" sewer system works much like a separate sewer — carrying all sewage to the treatment plant for treatment.

However, when it rains or snow melts, the sewers can be overloaded with incoming stormwater. When this happens, the sewers are designed to flow over internal dams in the underground pipes and into nearby streams and rivers. If they didn't have this release valve, raw sewage would back up into people's basements and streets.

Millions of gallons of untreated sewage and rainwater enter the river each year. State and federal regulations require cities to develop long-term plans to reduce these overflows



During dry weather, all sewage is carried to the treatment plant.



When it rains or snow melts, the sewers can be overloaded with incoming stormwater.

## COMBINED SEWER SYSTEMS: NATIONWIDE PROBLEM



Indiana has more than 100 communities with combined sewers.

Combined sewer systems carry both stormwater and raw sewage in the same pipes. Many cities with combined sewer systems have problems with raw sewage overflows when it rains. These overflows contain not only stormwater, but also untreated human and industrial waste, toxic materials and debris. Combined sewer systems serve roughly 772 communities containing about 40 million people, according to the U.S. Environmental Protection Agency. Most communities with combined sewer systems are located in the Northeast and Great Lakes regions and in the Pacific Northwest. Indiana has more than 100 communities with combined sewers.

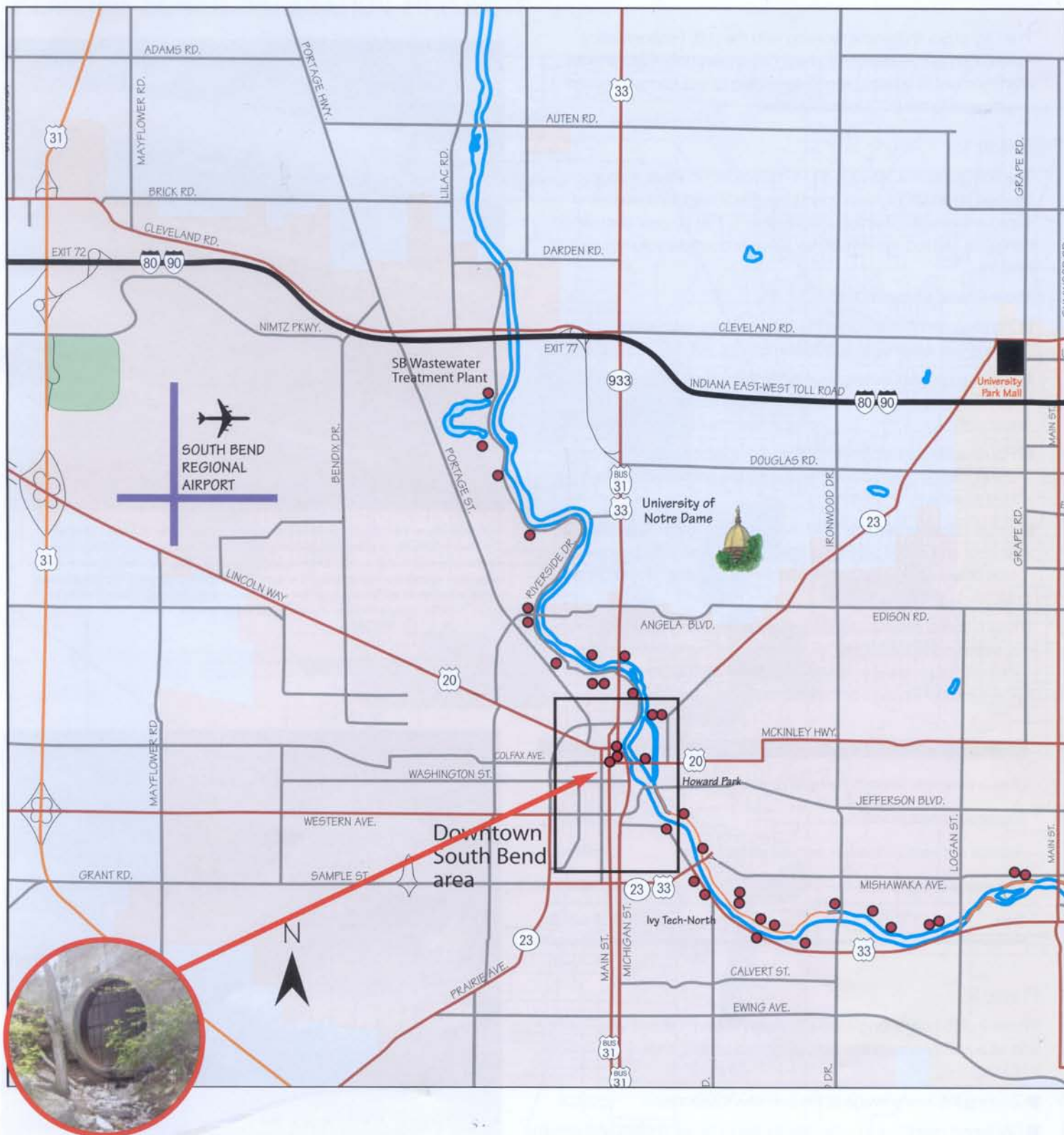


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# WHERE OVERFLOWS OCCUR



Overflow pipe near LaSalle and Michigan that sends raw sewage overflows to the St. Joseph River after it rains.

Raw sewage overflows from South Bend's sewer system into the St. Joseph River about 65 times in a typical year. In an average year, these overflows send 1.8 billion gallons of untreated sewage and stormwater into the river.

The red dots on the map above show 36 locations where raw sewage overflows into the river when it rains. In the past, the city had 45 overflow pipes, but nine have been eliminated since the 1990s.

## PLANS TO FIX PROBLEM

The City of South Bend is working with the U.S. Environmental Protection Agency and the Indiana Department of Environmental Management to develop a long-term plan to reduce raw sewage overflows into the St. Joseph River.

### PHASE 1

The first phase is a 10-year, \$118 million plan to solve chronic sewage backups into basements in several neighborhoods and improve sewage collection and treatment. The 10-year plan, when complete, will reduce annual raw sewage overflow volumes by 38 percent.

These Phase 1 projects will:

- Increase flow that reaches the wastewater treatment plant during wet weather to 100 million gallons per day
- Separate sewers in neighborhoods with chronic basement backups of sewage (reducing combined sewer area by 18 percent)
- Route additional stormwater from Southeast Quadrant of city to the Ironwood Storm Sewer (reducing the combined sewer area by 17 percent)
- Install inflatable dams to hold more sewage inside large diameter sewers and outfall pipes (Southeast Quadrant, on a major west-side sewer artery and near the Indiana University-South Bend campus on Ironwood.)

These planned projects are necessary parts of any long-term plan that state and federal agencies will require. They will reduce the combined storm-sanitary sewer area from 13,069 acres to 8,872 acres. Costs of Phase 1 are shown below:

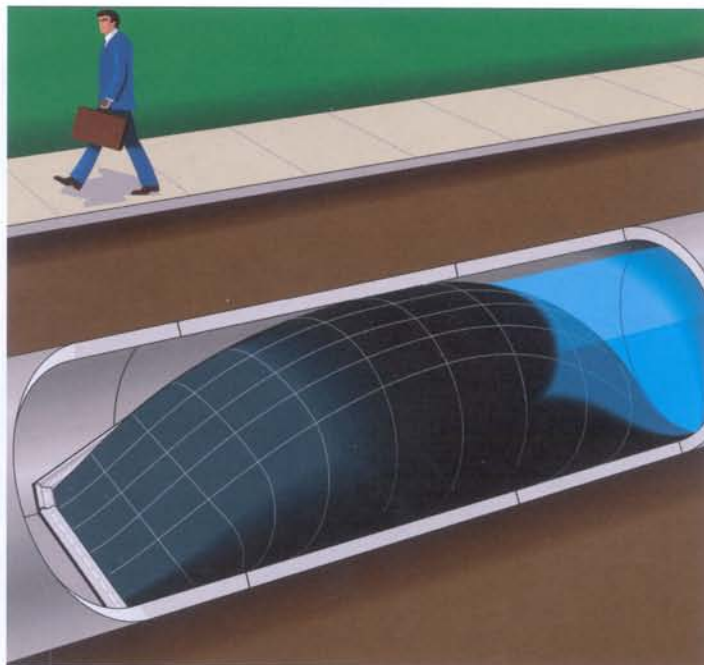
Phase 1 Project	Capital Cost
Increase Wastewater Treatment Plant peak capacity to 100 MGD	\$2 million
Neighborhood sewer separation	\$70 million
Additional stormwater removal from southeast quadrant of city	\$37 million
Inline storage (inflatable dams)	\$9 million
<b>Total</b>	<b>\$118 million</b>

### PHASE 2

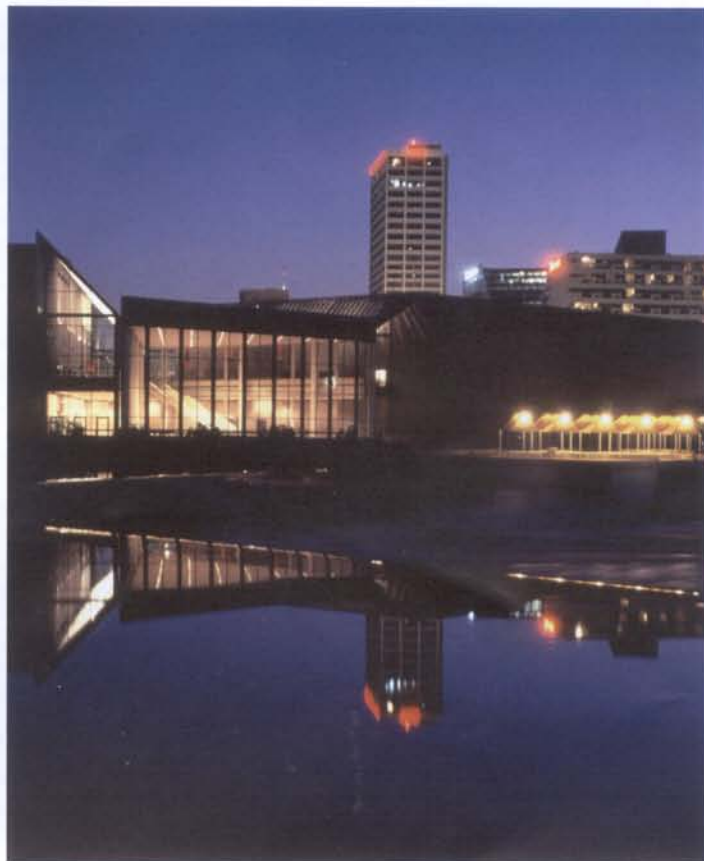
Phase 2 of the city's long-term plan hasn't been finalized yet. The city and its advisory committee have analyzed several preliminary options, including:

- Treating the raw sewage at the overflow locations,
- Capturing overflows in a storage tunnel or larger sewers and sending them to the existing treatment plant, or
- Using a combination of options: on-site treatment upstream of the East Race with a larger sewer downstream to get wastewater to the treatment plant.

These long-term options need further study, public input and clarification of regulatory requirements before a final plan can be selected. Meanwhile, the Phase 1 projects need to move forward because they will be part of any long-term plan the city chooses.

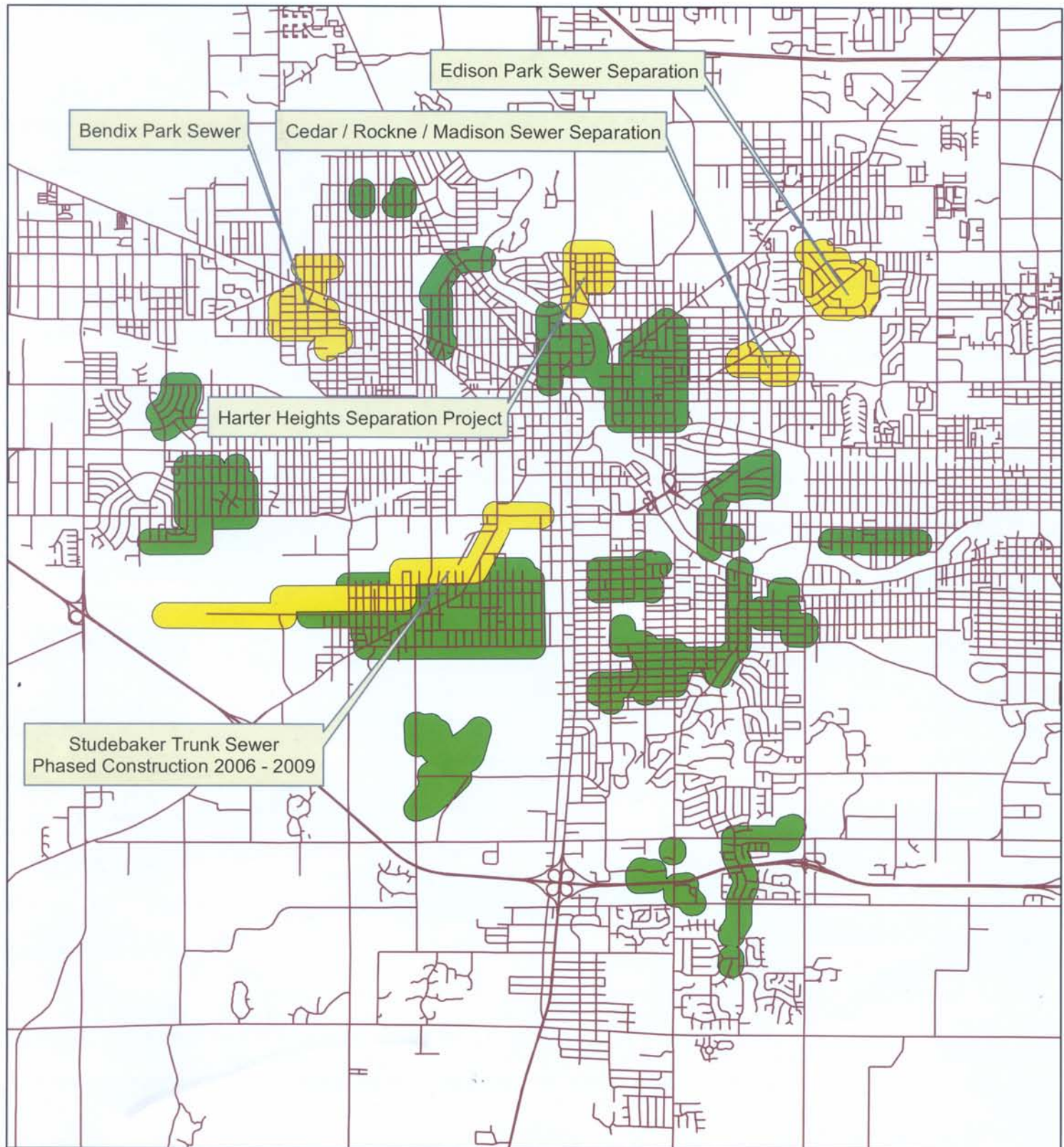


**Inflatable Dam:** This illustration shows an inflatable dam within the sewer system. The dam inflates like a giant balloon during a rain storm, holding back sewage that would otherwise overflow into the river. Dams like these help our existing sewer system store more wastewater. Sensors in the sewers will automatically lower the dam if water levels in the sewer get too high, so that sewer backups don't occur. The city plans to install these to create additional storage in the sewer system.





# PLANNED SEWER SEPARATION PROJECTS



## Locations of chronic sewer backups:

The shaded areas on this map show South Bend neighborhoods that suffer from chronic backups of sewage into basements. The city's long-term plan places a priority on eliminating these basement backups by removing stormwater from the sewers in these areas. In the first few years, the city will start the separation process in the areas shaded in yellow.

- Early priority projects
- Additional projects



## FUNDING THE PLAN

The City of South Bend has proposed a four-year, phased rate increase to finance necessary and required sewer and treatment plant improvements from 2006-2009.

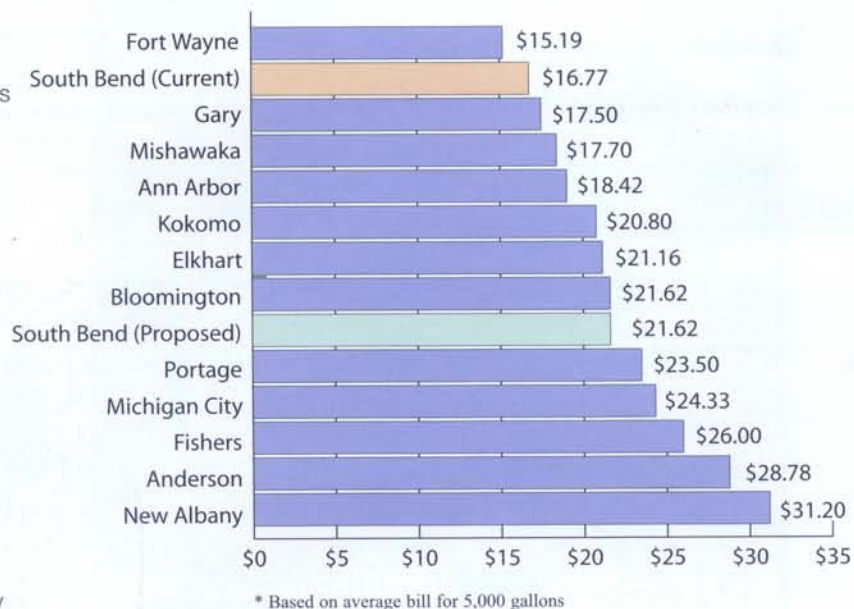
The rate increase will fund the first four years of a 10-year, \$118 million plan to reduce raw sewage overflows into the St. Joseph River. The increased rates will help solve chronic sewage backups into basements in several neighborhoods and improve sewage collection and treatment. This Phase 1 plan, when complete, will reduce annual raw sewage overflow volumes by 38 percent.

The city will finance projects over 20 or more years through low-interest loans or bonds. To support financing needs in 2006-2009, the city must raise sewer rates each year, as shown in the table on page one. Projected rates are based upon a monthly residential bill of 5,000 gallons.

Additional rate increases will be needed in future years to meet requirements and protect the St. Joseph River from sewage pollution. Phase 2 of the city's long-term plan will be developed following further study, public input and clarification of regulatory requirements for improving the river.

The chart shown at right compares South Bend's current and proposed 2006 rates with other cities' current sewer rates. Many other cities across the state will be raising sewer rates to pay for state and federal requirements to clean their waterways.

## 2006 RESIDENTIAL SEWER RATE COMPARISON\*



## WORK ALREADY COMPLETED

The City of South Bend has spent \$87 million since 1990 to stop sewage backups into basements, reduce sewer overflows into the St. Joseph River and improve sewage treatment. These improvements have already reduced overflows by more than 300 million gallons per year and shut off nine overflow pipes into the river.

Our investments to date include:

- \$51 million to expand and improve the wastewater treatment plant so it can treat more sewage
- \$18 million to improve and repair the sewer system so it can capture more sewage from our neighborhoods and convey it to the treatment plants
- \$8 million to improve maintenance and monitoring of the sewer system so it performs to its maximum potential
- \$10 million to separate the 965 acres of combined sewers in several neighborhoods

## REDUCTION OF INDUSTRIAL POLLUTANTS

The city also has worked with several large industrial customers to reduce their pollutant loads or flows into the sewer system. In some cases, industrial flows have been or will be routed away from the combined sewer system, thus reducing the impact and volume of sewer overflows.

## FREE DOWNSPOUT DISCONNECTION PROGRAM

The city also offers a free program to help homeowners remove their gutters and downspouts from the sewer system. Roof runoff overwhelms the sewer pipe's capacity early in a storm, contributing to basement backups and flushing pollution into the river. Since the program began in 2004, it has disconnected 277 downspouts and reduced sewer overflows by about 8.2 million gallons per year.

## FUTURE PLANS

While we still have a long way to go, we feel the efforts discussed in this newsletter are a good start in addressing our water quality and neighborhood health concerns. In fact, in 1999, the City of South Bend gained recognition from the U.S. Environmental Protection Agency and the Indiana Department of Environmental Management for its leadership in reducing sewage overflows and protecting the river.

Our future plans include restricting the flow of stormwater drains at key intersections to prevent chronic backups of sewage into basements. By slowing the flow of rainwater into the sewer, the city can better manage peak flows in the sewer system when a storm hits.





# Saint Joseph River...

## a resource worth protecting.

### WHAT CAN YOU DO?

#### Q. HOW CAN I HELP IMPROVE WATER QUALITY?

A. We need you to join us in solving the problem of raw sewage in the St. Joseph River. Everyone has a role: individual citizens, government, non-profit organizations, businesses, industry and community groups. You can help by:

- Disconnecting your downspouts and sump pumps if they are connected to the sewer system. The city's downspout disconnection program can provide free assistance. Call the Division of Engineering (574) 235-9251 to schedule an appointment.
- Don't send fats, oils and grease down the drain. They create clogs in our sewers and contribute to overflows and backups.
- Cleaning up after your pets.
- Disposing of household chemicals and used oil properly and not down the drain or down a storm sewer.
- Inviting the city to make a presentation to your civic association or neighborhood group.
- Learning how you can reduce water use in your homes and businesses and help keep pollution out of the storm drains.
- Wash your vehicle on grass or an unpaved surface.
- Clean up spilled brake fluid, oil, grease and antifreeze.
- Avoid lawn treatments that contain phosphorous and harmful pesticides.





# Mayor Announces 10-year Plan for a Cleaner River and Healthier Neighborhoods

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gallons per year. But we must continue to move ahead to address regulatory requirements and the needs of our city for sewage collection and treatment."

To meet increasingly stringent state and federal regulatory requirements, rate increases will be required every year or two for the next 20 years. Other communities in Indiana and across the nation also are facing additional costs and pressures to upgrade and maintain their sewer systems.

South Bend, Elkhart, Mishawaka and many other cities are working with the U.S. Environmental Protection Agency and the Indiana Department of Environmental Management on long-term plans to reduce overflows even further.

"Although we haven't yet finalized the details of the long-term plan with regulatory agencies, projects in this 10-year plan are necessary components of the long-term solution and need to move forward now," said Gary Gilot, Director of the Department of Public Works.

The 10-year plan has been reviewed by the mayor-appointed Advisory Committee comprised of community leaders from neighborhoods, academia, business and labor. The plan is consistent with the committee's recommendations that the city should place the highest priority on solving chronic basement

backups of sewage into people's homes and eliminate bottlenecks in the existing sewer system.

Beyond the next 10 years, the long-term plan options need further study and clarification of regulatory requirements before a final plan can be selected. The city will seek the public's involvement and input before selecting the long-term plan.

